

Risk Analysis of Job Stress Among Balinese Crew of Cruise Ships

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Abstract

Job stress can appear in all fields of work. Job stress not only occurs from the environment at work but also can be caused by the psychological condition of the workers. Working on a cruise ship demands higher patience to serve the guests in various activities and handle complaints. Moreover, work on cruise ships causes the workers separated from their families for a long time period, which can increase their mental pressure. The aim of this research is to describe the job stress of workers at a cruise ship. This research was conducted in January-June 2017. In an attempt to examine and understand this research, the researcher used a quantitative research method with a cross-sectional design and descriptive approach. The sample of this research was 111 participants with an affordable population are crew members who only come from Bali Province. Researchers used a convenient sampling technique and questionnaire as research instruments. The result shows that 60,36% of respondents experience job stress in moderate categories and 12.61% in the higher categories. The proportion of job stress in the higher categories was: mostly male (16.67%); at galley station (20.00%); working >5 years (14.71%); age group 11-20 years (25.00%); duration of work >11 hours (16.07%); and the level of fatigue is very tired (100%). The data, bivariate analyzed by using Kendall's tau-b correlation test with significance level is 0.05, showed a significant correlation between job stress and fatigue level ($p = 0.001$, $r=0,41$). Recommendation to solve these problems are: First, workers need to conduct stress management to minimize the impact of job stress. Second, companies need to pay attention to the workload and complaints of workers so it can develop a sustainable plan, particularly related to job stress.

Keywords: Job Stress, Cruise Ships, Fatigue

Introduction

A cruise ship is a passenger ship that used for transportation on the sea, mainly for leisure purposes. The cruise ship is often equated with floating hotels or resorts that can move thru the ocean (Sudiarta, 2011). In general, there are 14 types of work stations on a cruise ship. Most of the Indonesian workers work in Hospitality, Food and Beverage, and Housekeeping stations (Bakti, 2014). Working in a cruise ship attracts the majority of the Indonesian

population, mostly because it offers a large amount of salaries. The salaries range from USD 600 to USD 3000 per month, depending on the job position. 70% of people who work on a cruise ship come from low-income countries (Argyo, 2011; Terry, 2011). Working on a cruise ship does not all look perfect. Some problems can threaten the safety and health of the workers. All workers have undergone Basic Safety Training (BST) course (Syahid, 2016). Having a BST certificate does not guarantee

workers free from safety and work-related health problems. Workers are required to work 10 to 13 hours a day in a week; even waiters can work for 16 hours a day. Working on a cruise ship required patience, especially when handling complaints from guests with a rude attitude. Workers must be tough being miles away from the family for a long time. Another work problem that also exists in a cruise ship environment is workers jump from a ship due to not be able to work under pressure (Argyo, 2011). Excessive work hours and high workload can emerge work stress. The study of the International Labor Organization (2008) showed the increase of mental disorders cases, namely, one in ten people experienced anxiety, stress, loss of enthusiasm, even depression. The impact of this work stress costs more than 200 US dollars losses each year.

A similar study of job stress in tourism also found in Winata et al. research with a focus on job stress of hotel employees in Surabaya, where the stress level of workers in this category is quite high with an average of 3.15. Research conducted by Aditya states that housekeeping workloads on hotels in Surabaya, about 46.15% of respondents have a very high workload. Besides this research, there was also news published in several online media related to cruise ship workers. Between 2014-2017 there is some news related to work problems in cruise ships. Okezone News February 21, 2014, wrote, "A cruise ship worker from Bali throws out himself from the ship where he works". Nusa Bali December 1, 2016, wrote, "Cruise ship workers go berserk, allegedly experiencing mental disorders". Bali Otonom February 7, 2017, wrote "Depression, cruise ship worker hang himself". The results of the research and published news can be strong evidence that workers in the tourism sector,

especially in cruise ships, have a high risk of experiencing job stress.

Bali is a well-known province in Indonesia for its tourism, where the majority of people employed in the tourism sector by 30.36% of the total working population (Bali Provincial Statistics Agency, 2016). Sadia's research states that the labor population from Bali, who worked on Mediterranean Shipping Company cruises in 2010, was 1806 people with an average growth during 2005-2010 is 24.32%. Based on BP3TKI Denpasar data in 2016, from the total of the Balinese workforce who work abroad, 60% are workers who work in the cruise ship sector. The data shows that working on a cruise ship is one of the most sought-after employment choices by Balinese workers. The high number of cruise ship workers from Bali does not rule out the possibility that Balinese workers are also facing job stress on cruise ships (Sadia, 2011).

Based on these facts and situations, given the importance of reducing the risk of job stress by developing a conducive work and organizational culture (Kurniawidjaja, 2010), the authors are interested in researching job stress on cruise ship workers from Bali. This study aims to find out the description of job stress on cruise ship workers.

Methods

This research is a quantitative descriptive study with a cross-sectional design, conducted on cruise ship workers from Bali Province during January-June 2017.

The population of this research is all workers, and the affordable population are cruise ship workers dispatched by agencies or schools from Bali Province, there are 5156 people based on BP3TKI Denpasar data. The calculation of sample size is done by using the

estimated proportion formula in the population, with the precision 10%, so the minimum required sample is 94 people. With the inclusion criteria is cruise ship workers from Bali have been working at least one year and willing to fill out a questionnaire.

Sample selection was made by using a convenient sampling technique. Convenience sampling is sampling based on the availability of elements and the ease of getting them. Samples are taken or selected because the sample is in the right place and time. Convenience sampling is also often referred to as incidental sampling. Researchers use this technique sampling with consideration of the limitations of time and accessibility of the sample. A research instrument is a questionnaire form. The collected data analyzed descriptively using the Stata 12 Program. The analysis method is a univariate analysis and bivariate analysis using the Kendall's tau-b Correlation.

Results

Data collection conducted in six weeks. The number of cruise ship

workers who received questionnaires was 362 people, and those who responded to the survey were 118 people; thus, the response rate of this research data collection was 32.60%. Of 118 people who filled out the questionnaire, seven people had to be excluded, so the total sample included in this study were 111 people. This amount exceeds the minimum sample requirement, which is need 94 respondents.

Demographic and Work Characteristics of Respondents

Demographic characteristics of respondents in this study: age, sex, working period, and educational background are presented in Table 1. Most of the respondents were in the age between 21-30 years (63.96%) with the average age was 28 years old ($SD \pm 5, 9$), the respondents were mostly male (75.68%), the working period was less and until five years (69.37%) and educational background was Bachelor/ Associate Degree in Tourism (59.46%).

Table 1. Demographic Characteristics and Job Characteristics of Respondents

Characteristics of Respondent	Number	(%)
Group of Age (year)		
11-20	4	3,60
21-30	71	63,96
31-40	32	28,83
41-50	4	3,60
Sex		
Male	84	75,68
Female	27	24,32
Working periode		
>5 years	34	30,63
≤5 years	77	69,37
Education		

Characteristics of Respondent	Number	(%)
High School/Vocational in Tourism	25	22,52
High School/Vocational in Non Tourism	13	11,71
Bachelor/Associate in Tourism degree	66	59,46
Bachelor/Associate in Non Tourism degree	7	6,31
Duration of Work		
≤11 Hours	55	49,55
>11 Hours	56	50,45
Work Station		
Beauty Salon	5	4,50
Casino	2	1,80
Cruise Staff	4	3,60
Engineering	3	2,70
Food and Beverage	48	43,24
Galley	20	18,02
Hotel Operation	8	7,21
Housekeeping	21	18,92

For the work characteristics of respondents are the duration of work and work stations (presented in Table 1). Most of the respondents had a duration of work per day for more than eleven hours, with an average of 11,23 hours a day, and the most extended duration of work was thirteen hours/day. Regarding work stations, most respondents worked in the Food and Beverage Station (43.24%), while the lowest was in Casino Station (1.80%).

Job Stress and Subjective Job Fatigue

The results of job stress measurements with job stress analysis questionnaires and subjective job fatigue with KAUPK2 questionnaire can be seen in Table 2. The results of job stress measurements showed that most of the stress level of the respondents were in moderate category (60.36%), higher than workers which their job stress level are in the low and high category. In the fatigue variable, the level of subjective fatigue was in the tired category (79.28%) outright as the highest proportion.

Table 2. Job Stress and Subjective Fatigue of Respondents

Variable	Number (%)	
Job Stress Level		
Low	30	27,03
Medium	67	60,36
High	14	12,61
Subjective Job Fatigue Level		
Not Tired	14	12,61
Tired	88	79,28
Very Tired	9	8,11

Distribution of Job Stress Based on Characteristics of Respondents

Distribution of job stress based on demographic characteristics (sex, group of age, working period, and educational background) of respondents were analyzed by using cross tables and the results presented in Table 3. The higher distribution of job stress was on respondents in a group of age 11-20 years, around 25%. Based on sex, the proportion of job stress was higher for males (16.67%). Judging from the length of work, the highest proportion of job stress occurs in groups with a contract period of more than five years, which is equal to 14.71%.

Respondents spread into eight stations, which had their assignments with a duration of work was more than eleven hours and less until equal to eleven hours. The distribution of job stress based on job characteristics is presented in Table 3. The distribution of job stress mostly occurs in respondents with a duration of work for more than eleven hours (16.07%). Based on job stress that occurs in the eight stations, the proportion of work stress distribution with high category occurs mostly in Galley station (20.00%), second place was Food and Beverage station (16.67%) and third was Housekeeping (9, 52%)

Table 3. Distribution of Job Stress Based on Demographic and Job Characteristics of Respondents

Characteristics of Respondent	Job Stress Low	Medium	High	Number (%)
Group of Age (year)				
11-20	0 (0,00%)	3 (75,00%)	1 (25,00%)	4 (100%)
21-30	14 (19,72%)	48 (67,61%)	9 (12,68%)	71 (100%)
31-40	13 (40,63%)	15 (46,88%)	4 (12,50%)	32 (100%)
41-50	3 (75,00%)	1 (25,00%)	0 (0,00%)	4 (100%)
Sex				
Male	27 (32,14%)	43 (51,19%)	14 (16,67%)	84 (100%)
Female	3 (11,11%)	24 (88,89%)	0 (0,00%)	27 (100%)
Working period				
>5 years	13 (38,24%)	16 (47,06%)	5 (14,71%)	34 (100%)
≤5 years	17 (22,08%)	51 (66,23%)	9 (11,69%)	77 (100%)
Duration of Work				
11 Hours	15(27,28%)	35 (63,63%)	5 (9,09%)	55(100%)
>11 Hours	16(28,57%)	31 (55,36%)	9 (16,07%)	56(100%)
Work Station				
Beauty Salon	0 (0,00%)	5 (100%)	0 (0,00%)	5 (100%)
Casino	0(0,00%)	2 (100%)	0 (0,00%)	2 (100%)
Cruise Staff	1 (25,00%)	3 (75,00%)	0 (0,00%)	4 (100%)
Engineering	1 (33,33%)	2 (66,67%)	0 (0,00%)	3 (100%)
Food and Beverage	14 (29,17%)	26 (54,17%)	8 (16,67%)	48 (100%)
Galley	7 (35,00%)	9 (45,00%)	4 (20,00%)	20 (100%)
Hotel Operation	2 (25,00%)	6 (75,00%)	0 (0,00)	8 (100%)
Housekeeping	5 (23,81%)	14 (66,67%)	2 (9,52%)	21 (100%)

Fatigue can trigger job stress, especially when physical conditions are exhausted. It will disrupt concentration and cause a decrease meant of physical abilities. The following distribution of job stress based on subjective fatigue of the respondents is presented in Table 4. Distribution of job stress based on the level of subjective job fatigue shows a higher proportion in the very tired category (100%).

Table 4. Distribution of Job Stress Based on Subjective Job Fatigue Level

Characteristics of Respondent	Job Stress			Number (%)
	Low	Medium	High	
Subjective Job Fatigue Level Not Tired				
Tired	6 (42,86%)	8 (57,14%)	0 (0,00%)	14 (100%)
Very Tired	24 (27,27%)	59 (67,05%)	5(5,68%)	88 (100%)
	0 (0,00%)	0 (0,00%)	9 (100%)	9 (100%)

Bivariate Analysis of Job Stress Toward Characteristics of Respondents and Subjective Job Fatigue

The chosen bivariate analysis method in this study was the Kendalls tau-b Correlation Test because the dependent variable is ordinal, and the independent variable is categorical. This test does not require data to be distributed normally, and variables must not linear. The result of the Kendall's Correlation Test b-data is presented in Table 5. Based on Kendall's t-correlation Correlation Test with a significance level of 0.05, the result showed that job stress was related to variables of subjective job fatigue ($p = 0.001$) and variable of a group of age ($p = 0.007$). In bivariate analysis between job stress and

subjective job fatigue variables, the result was $r = 0.41$, which means there was a moderate positive correlation between job stress and subjective job fatigue. The higher the fatigue level of the respondents, the higher the potential stress of work experienced will be. The bivariate analysis between job stress and a group of age variables obtained a value of $r = -0.24$, which means there was a weak negative correlation between job stress and a group of age. The younger the age of the respondent, the higher the potential to experience job stress. As for the variables of sex, working period, and duration of work, there was no correlation with the occurrence of job stress.

Table 5. Correlation of Analysis Kendall's tau-b Toward Demographic Characteristics of Job Stress, Job Characteristics, and Subjective Job Fatigue

Characteristics Respondent	P-Value	R-Value
Sex	0,580	0,05
Subjective Job Fatigue Level	0,001	0,41
Working periode	0,253	-0,11
Group of Age	0,007	-0,24
Duration of Work	0,604	-0,05

Discussion

Characteristics of Respondents and Subjective Job Fatigue

Respondents of cruise ships from Bali Province, mostly male. According to the research of Pertiwi, the number of male workers is more than women, because there is a tendency for men to be the main income earners in the family. The lowest age of the respondent was 19 years old, and the highest age is 48 years old. World Health Organization states that the range of productive working age are between 15-64 years old, so workers on cruise ships from Bali Province are all in the productive category. Regarding the educational background, the majority of workers had university/ college degrees. Based on the major, most of the workers had a degree in tourism. The majority of cruise ship companies are looking for a workforce that has at least had a high school / vocational school diploma and had skills according to the type of work on each cruise. The average length of the working period was 5 years. According to Adiwinata et al., the workers who have a long working period (> 10 years), have higher job satisfaction and productivity, compared to a group working period <10 years (Nilan and Artini, 2013; Adiwinata, 2014).

Based on the duration of work each day, the worker works for 11 hours on average. All workers work above 8 hours per day; this is against Indonesia Law Number 13 of 2003 about Manpower, which states that working hours in a day are 8 hours per day and 40 hours in one week for five working days a week. Most workers were in the Food and Beverage station. According to a study conducted by Oka, most Balinese workers work on the Food and Beverage station, such as bars, restaurants, and waitresses. Most respondents experienced fatigue in the

tired category. According to Nilan et al., the work environment in a cruise ship demands high concentration.

Based on the study of the proportion of job stress, the result shows in the medium category. The job stress is in category moderate to large. This finding indicates that job stress is higher than other jobs in the service sector and mostly occurs in subordinates workers (Nilan and Artini, 2013; Oka *et al.*, 2015; Wolff *et al.*, 2013).

The concept of stress, according to Cooper (1976), is a dynamic model of job stress, where it explained that the source of stress is in the environment, which influences individual characteristics and also impacts on both individual symptoms and biopsychosocial symptoms such as in organization. World Health Organization (WHO) develops job stress models, according to Cooper and Davidson (1987). It described that stress manifestations specifically occurred from situations and conditions related to work problems such as workload, work routine, career development, interpersonal relationships with co-workers, organizations within the company, and others. It referred to as occupational stress (Cooper *et al.*, 2001).

The age proportion of workers who experience job stress is in group 11-20 years old. This is allegedly related to young workers who lack work experience compared to older workers. According to Wijono, young workers are often disappointed with their work because they are not challenged and given adequate responsibilities. There is a significant relationship between age and job satisfaction (Wijono, 2010). The lowest job satisfaction is found in young employees. The management must pay more attention to guidance young workers by increasing the quality and quantity of their competencies. Based on

the results of Kendall's tau-b Correlation Test, the group of age is related to the occurrence of work stress. The younger the age, the higher potential for workers to experience job stress.

In terms of sex, the proportion of job stress is mostly men. This is related to what was conveyed by Wijono, that state sex can influence the reaction of stress. This is mainly influenced by the different tempers and characteristics of each sex (Wijono, 2010).

Work period \leq five years of experience job stress more if compared with those who had a working period > 5 years. A short or long working period can trigger stress, and a large workload could exacerbate it. Long work hours makes workers feel tired of their work routines, while short working periods also can cause stress if the given workload is too heavy and does not match their abilities (Munandar, 2001). Enrichment of insight, motivation, work rotation can be used as a way to minimize this problem.

A total of 16.07% of respondents with a duration of work > 11 hours experienced high job stress. The length of work time that must be lived due to high workload results a lack of leisure time for workers to interact with their family and society. Long work schedules and lack of time to socialize are potential factors causing work stress (Kamal, 2007; Cox *et al.*, 2000).

Job stress mostly occurs in the galley station. According to Mangnguluang *et al.*, hazards in complex kitchen parts include having to deal with glassware and metal-based equipment; besides that, they also got exposure from food and beverage making machines, stoves. Therefore patience and concentration are needed (Mangnguluang *et al.*, 2015). The impact of workers prone to gain job stress. Based on Suma'mur, the work station is where officers carry out daily activities

in accordance with the tasks assigned by the company, which is very likely a high-risk job to occur and as a major influence of the risk of accidents due to work (Suma'mur, 2009).

Work exhaustion is a condition that is characterized by feelings of fatigue that can reduce alertness that affects work productivity. The proportion of respondents' subjective job fatigue wares mostly in the tired category. Workloads that are often overtime trigger work fatigue. Moreover, irregular sports and rarely medical check-ups accelerate the occurrence of work fatigue for workers, so the risk of job stress is higher (Argyo, 2011). Based on the results of Kendall's Correlation Test, work fatigue is related to job stress. If the level of work fatigue is higher, so the potential for workers to experience job stress also higher. The research of Sholihah and Fauzin also states that fatigue is in direct relations with job stress. Wadsworth says that seafarers who do their work on sea tours are at risk of experiencing job stress due to the fatigue that they felt. The longer the trip of work, the greater the potential of stress. Fatigue not only decreases performance and decreases safety, but can increase mental health risks which are known as risk factors for chronic disease in the future (Sholihah Q and Fauzia, 2013; Wadsworth *et al.*, 2006; Smith *et al.*, 2006).

Conclusion

Based on the results and discussion, conclusions that can be taken:

- a. The situation of job stress and subjective job fatigue of the respondents were mostly in moderate stress category and fatigued subjective work in fatigue level.
- b. Analysis of the Kendall's tau-b Correlation Test, shows that there is significant relation between work fatigue and group of age with the

occurrence of job stress. The higher the fatigue, the higher potential for job stress will be and the lowest age of the worker, the higher job stress they will experience.

Recommendation

The suggestions based on the research results obtained in this study are:

1. Workers need to do stress management to minimize the impact of work stress by carrying out positive activities that are entertaining and refreshing their minds
2. To the Universities/ Colleges/ Cruise ship agents, they must provide good theoretical and practical training to manage mental health.
3. Companies also must pay attention to the workload by balancing the number of hours of rest and hours for work. Provide regular training to improve knowledge related to safety and health at work.
4. Management needs to pay attention to the complaints of workers, so they can develop sustainable programs related to work stress and mental health.

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